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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,689	12/10/2004	Nora Brambilla	DE 020157	3098

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EXAMINER	
LE, TUNG X	
ART UNIT	PAPER NUMBER
2821	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/18/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,689	BRAMBILLA ET AL.	
	Examiner	Art Unit	
	Tung X. Le	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment received 14 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,16 and 17* is/are rejected.

7)☒ Claim(s) *15 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on November 14, 2006 is acknowledged.

Claim Objections

2. Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 13 fails to further limit the subject matter of claim 1.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-14 and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Jiang et al. (U.S. 2002/0027527 A1, of record).

With respect to claim 1, Jiang discloses in figure 1 an antenna (100) having a dielectric substrate (9) having two larger end faces (the top face and the bottom face) and four smaller end faces (four side faces of the antenna [100]) and two resonant printed wiring structures (107-108) for use in high-frequency and microwave range, a first printed wiring structure (107) being arranged on one end face (on left side of the antenna [100]) of the substrate (9) along a first edge (the left side edge) and a second printed wiring structure (108) on an opposite (on the right side of the antenna [100]),

second edge (the right side edge) of the same end face (facing to [Ref. Line A]), wherein each of the first and second printed wiring structures includes a first printed wire (7a) on the end face extending from a first one of the side faces to a second one of the side faces along one of the edges of the end face (see the first structure [107]), a second printed wire (5a and 5c) disposed on the end face in parallel to and spaced apart from the first printed wire (see the first structure [107]), and also extending from the first side face to the second side face (see figure 1), and a third printed wire (6a) disposed on the end face extending between the first printed wire and the second printed wire perpendicularly to the first and second printed wires to connect the first printed wire to the second printed wire (figure 1).

With respect to claim 2, Jiang discloses that the second printed wiring structure (108) being equal to the first printed wiring structure (107) as regards shape and size (see figure 1).

With respect to claim 3, Jiang discloses that the substrate (9) is in essence rectangular (figure 1) and four smaller end faces (four side faces of the antenna [100]) and in that the first and second printed structures being deposited on a first end face (the left end face) and stretch out from a first to a second, opposite side face along the edge (see figure 1).

With respect to claim 4, Jiang discloses that the first and second printed wiring structures (107-108) have the form of a rectangular face (see figure 1).

With respect to claim 12, Jiang discloses that the first and second printed wiring structures (107-108) are mirrored on the first end face (see figure 1).

With respect to claim 13, Jiang discloses that a printed wiring board (11) on which an antenna (100) as defined is arranged (see figure 2).

With respect to claim 14, Jiang discloses a radio communication device using for the GPS, DCS/PCS, UMTS and Bluetooth domain characterized by an antenna (intended use).

With respect to claim 5, Jiang discloses in figure 1 an antenna (100) having a dielectric substrate (9) and two resonant printed wiring structures (107-108), a first printed wiring structure (107) being arranged on one end face (on left end face side of the antenna [100]) of the substrate along a first edge (on the left side) and a second printed wiring structure (108) on an opposite (on right end face side of the antenna [100]), second edge of the same face (see figure 1), wherein the substrate (9) is in essence rectangular (figure 1) having two larger end faces (the top face and the bottom face) and four smaller end faces (left, right, front, back faces of the antenna [100]) and in that the first and second printed wiring structures are deposited on a first end face (at Ref. Line A) and stretch out from a first to a second (figure 1), opposite side face along the edge (figure 1), and wherein each printed wiring structure is subdivided into three printed wires where a first printed wire (7a) stretches out from the first to the second side face along the edge (see [107]), a second printed wire (108) stretches out from the second to the first end face (see [108]), and a third printed wire (6a) is connected to the first printed wire and the first printed wire is connected to the second printed wire (see figure 1).

With respect to claim 6, Jiang discloses that a fourth printed wire (6c) is connected to the second printed wire (figure 1).

With respect to claim 7, Jiang discloses that the first and second printed wires (7a and [5a and 5c]) are equally long (figure 1).

With respect to claim 8, Jiang discloses that the third and fourth printed wires (6a and 6c) are equally long (figure 1).

With respect to claim 9, Jiang discloses in figure 1 that the first and second printed wires (7a and [5a and 5c]) are longer than the third and fourth printed wires (6a and 6c).

With respect to claim 10, Jiang discloses in figure 1 that the fourth printed wire (6c) runs along an edge of the first end face (facing to the [Ref. Line A]).

With respect to claim 11, Jiang discloses that the first and third printed wires (7a and 6a) are arranged perpendicular to the second and fourth printed wires (figure 1).

With respect to claim 16, Jiang discloses in figures 1-2 a printed circuit board assembly (11) comprising a printed circuit board (see paragraph [0026]), and an antenna (100) mounted on the printed circuit board (see paragraph [0026]), the antenna including a dielectric substrate (9) having two larger end faces (one top face and one bottom face) and four smaller end faces (four side faces of left, right, front, and back side faces of the antenna [100]) and two resonant printed wiring structures (107-108), adapted for use in high frequency and microwave range, a first printed wiring structure (107) being arranged on one end face of the substrate along a first edge and a second printed wiring structure (108) on an opposite (on the right side of the antenna), second

edge of the same end face (figure 1), wherein each of the first and second printed wiring structures includes, a first printed wire (7a) disposed on the one end face extending from a first one of the side faces to a second one of the side faces along one of the edge of the end face (see figure 1), a second printed wire (5a and 5c) disposed on the one end face in parallel to and spaced apart from the first printed wire, and also extending from the first side face to the second side face (figure 1), and a third printed wire (6a) disposed on the one end face extending between the first printed wire and the second printed wire perpendicularly to the first and second printed wires to connect the first printed wire to the second printed wire (see figure 1).

With respect to claim 17, Jiang discloses that the first and second printed wiring structures comprises silver paste (inherently), and wherein the antenna is mounted on the printed circuit board (11) such that the one end face of the antenna on which are disposed the first and second printed structures (107-108) is disposed directly on and immediately adjacent to the printed wiring board (see figures 1-2).

Allowable Subject Matter

5. Claims 15 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Prior art of record fails to disclose or fairly suggest the following limitations:

- An antenna having each of the first and second printed wiring structures further includes a fourth printed wire disposed on the one end face, and being connected to one of the first and second printed wires and not connected to the other of the first and second printed wires as claimed in claim 15.
- A printed circuit board assembly, comprising each of the first and second printed wiring structures further includes a fourth printed wire disposed on the one end face, and being connected to one of the first and second printed wires and not connected to the other of the first and second printed wires as claimed in claim 18.

Response to Arguments

7. Applicant's arguments filed on November 14, 2006 have been fully considered but they are not persuasive.

With respect to claim 1, Applicant argues that Jiang fails to teach or suggest the following limitations:

(1) A first printed wire on the end face extending from a first one of the side faces to a second one of the side faces along one of the edges of the end face;

(2) A second printed wire disposed on the end face in parallel to and spaced apart from the first printed wire, and also extending from the first side face to the second side face; and

(3) A third printed wire disposed on the end face extending between the first printed wire and the second printed wire perpendicularly to the first and second printed wires to connect the first printed wire to the second printed wire.

Thus, Examiner disagreed.

(1) A first printed wire (7a) on the end face extending from a first one of the side faces to a second one of the side faces along one of the edges of the end face (see the first structure [107]);

(2) A second printed wire (5a and 5c) disposed on the end face in parallel to and spaced apart from the first printed wire (see the first structure [107]), and also extending from the first side face to the second side face (see figure 1); and

(3) A third printed wire (6a) disposed on the end face extending between the first printed wire and the second printed wire perpendicularly to the first and second printed wires to connect the first printed wire to the second printed wire (figure 1).

With respect to claims 2-4 and 12-14, Applicant argues that Jiang fails to teach or suggest the following limitations:

No antenna that includes a dielectric substrate mounted on printed circuit board.

Thus, Examiner disagreed.

Figure 1 shows clearly on the top view and the side view having an antenna (107-108) built in a dielectric substrate (9) mounted on printed circuit board (paragraph [0020]).

With respect to claim 5, Applicant argues that Jiang fails to teach or suggest the following limitations:

(1) A first printed wire stretches out from the first to the second side face along the edge;

(2) A second printed wire stretches out from the second to the first end face; and

(3) A third printed wire is connected to the first printed wire and the first printed wire is connected to the second printed wire.

Thus, Examiner disagreed.

(1) A first printed wire (7a) stretches out from the first to the second side face along the edge (see [107]);

(2) A second printed wire (108) stretches out from the second to the first end face (see [108]); and

(3) A third printed wire (6a) is connected to the first printed wire and the first printed wire is connected to the second printed wire (see figure 1).

With respect to claims 6-11, Applicant argues that Jiang fails to teach or suggest the following limitations:

Element 6c does not run along an edge of the first end face.

Thus, Examiner disagreed.

Figure 1 shows clearly the element 6c running along an edge of the first end face.

With respect to claim 16, Applicant argues that Jiang fails to teach or suggest the following limitations:

(1) A first printed wire disposed on the one end face extending from a first one of the side faces to a second one of the side faces along one of the edge of the end face;

(2) A second printed wire disposed on the one end face in parallel to and spaced apart from the first printed wire, and also extending from the first side face to the second side face; and

(3) A third printed wire disposed on the one end face extending between the first printed wire and the second printed wire perpendicularly to the first and second printed wires to connect the first printed wire to the second printed wire.

Thus, Examiner disagreed.

(1) A first printed wire (7a) disposed on the one end face extending from a first one of the side faces to a second one of the side faces along one of the edge of the end face (see figure 1);

(2) A second printed wire (5a and 5c) disposed on the one end face in parallel to and spaced apart from the first printed wire, and also extending from the first side face to the second side face (figure 1); and

(3) A third printed wire (6a) disposed on the one end face extending between the first printed wire and the second printed wire perpendicularly to the first and second printed wires to connect the first printed wire to the second printed wire (see figure 1).

With respect to claim 17, Applicant argues that Jiang fails to teach or suggest the following limitations:

The printed wiring structures comprise silver paste.

Thus, Examiner disagreed.

Silver paste material used for printed wires are inherently or intended use since wiring antenna should be made any conductive materials such as cooper, iron, or aluminum. Applicant does not indicate or suggest purpose of using the silver paste material for the printed wires.

Thus, Jiang discloses all claimed limitations in claims 1-14 and 16-17 as clearly shown in figures 1-2, so the 102(b) rejection is proper.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Le whose telephone number is 571-272-6010. The examiner can normally be reached on 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan can be reached on 571-272-1834740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner
Tung Le
AU 2821

Hoanganh Le
Primary Examiner